



THE LUVOIR MISSION CONCEPT STUDY LOGISTICS

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November 10, 2016



Near-Term Timeline (STDT Actions)



- **November F2F meeting: focus on telescope and other observatory decisions**
 - Define input parameters. Decide on aperture(s), FOV(s), FOR, wavelength range, on-axis vs. off-axis, etc.
 - We will select two limited and abbreviated architectures based on Aerospace recommendation:
 - “Architecture A” will be ambitious and designed to a future fairing. **16-m chosen yesterday**
 - “Architecture B” will be less ambitious and designed to fit current fairings. **9-m chosen yesterday**
 - Together, these two will demonstrate LUVOIR’s scalability and flexibility w.r.t. unknowns in future budgets and technologies
 - Interface with HabEx team to ensure consistency of science story across the two teams, as they have similar science themes
 - Begin formal interactions with Aerospace on the study



Status of LUVOIR: FY16 Mission Design Accomplishments



- **1st LUVOIR STDT face-to-face (F2F) meeting was held May 9-10 at GSFC**
 - Decided on priority science goals. Organized into science working groups and leads
- **At 2nd STDT meeting, instrument suite chosen on basis of science observation needs**
 1. **Optical / NIR Coronagraph:** high-contrast imaging and low resolution spectroscopy
[Lead: Laurent Pueyo, STScI]
 2. **LUMOS:** UV imaging, high-resolution and multi-object spectroscopy
[Lead: Kevin France, Colorado]
 3. **High-Definition Imager:** wide-field Optical/NIR imaging, possibly with high-precision astrometric capability [Lead: Marc Postman, STScI]
 4. **Optical/NIR Spectrograph:** multi-resolution modes up to $R \sim 10^5$, possibly with high-precision RV capability [Lead: Courtney Dressing, CalTech]
- **Instrument teams to provide required parameters for GSFC's ODL and IDL by end of 2016**
- **Two mission architectures will be studied (in a limited and abbreviated fashion)**
 - Strategy recommended by Aerospace Corporation
- **Architecture A**
 - Instruments 1, 2, & 3. Two empty instrument bays for possible international contributions
- **Architecture B**
 - Instruments 1, 2, & 4. One empty instrument bay if possible

- **Industry**

- Industry individuals attending F2F meetings and participating in Technology Working Group
- Initial discussions between study office and Aerospace Corporation. Debra Emmons gave presentation on CATE process to STDT
- Working with Ball, SAO, and Night Sky Systems to study polarization effects, thermal architecture and integrated modeling
- Plans for more extensive industry involvement through CANs

- **LUVOIR Technology Working Group has established six Sub-Groups corresponding to critical technology areas (sub-group leads identified below)**

- **Ultra-stable systems (27 members):** Lee Feinberg (GSFC), Scott Knight (Ball Aerospace)
- **Coronagraphy (24 members):** Olivier Guyon (Arizona)
- **Detectors (20 members):** Don Figer (RIT), Eric Schindheim (SWRI)
- **Coatings (15 members):** Kunjithapatham Balasubramanian (JPL)
- **General instrument components (17 members):** Tyler Groff (GSFC), Paul Lightsey (Ball Aerospace)
- **Starshades (11 members):** Jon Arenberg (NGAS)

Total of 12 industry members from 6 companies (some on multiple WGs)



Status of LUVOIR: Science Organization and Structure



- **Weekly STDT telecons have speakers followed by Q&A and other topics as needed**
 - Some of the speakers to date:
 - “Decision Process” (Gary Blackwood)
 - “LUVOIR Telescope Design Overview” (Matt Bolcar)
 - “Aerospace CATE Overview” (Debra Emmons)
 - “Observations on Past Decadals” (Keith Warfield)
 - “The Future of Space Astrophysics Is In Your Hands” (Matt Mountain)
- **Six Working Groups established (co-leads identified below)**
 - **Exoplanets** : Mark Marley (Ames), Avi Mandell (GSFC)
 - **Cosmic Origins** : John O’Meara (St. Michael’s College), Jane Rigby (GSFC)
 - **Solar System** : Walt Harris (Arizona LPL), Geronimo Villanueva (GSFC)
 - **Science simulations** : Jason Tumlinson (STScI), Aki Roberge (GSFC)
 - **Technology** : David Redding (JPL), Matt Bolcar (GSFC)
 - **Communications** : Debra Fischer (Yale), Shawn Domagal-Goldman (GSFC)
- **Senior Advisors Panel**
 - To provide scientific/technical/strategic advice, serve as informal “blue team” reviewers for documents
 - Members: Alan Dressler (Carnegie Observatories), Julianne Dalcanton (U of Washington), Garth Illingworth (UC Santa Cruz), Natalie Batalha (Ames), Jonathan Fortney (UC Santa Cruz)



IDL Schedule Studies 2017



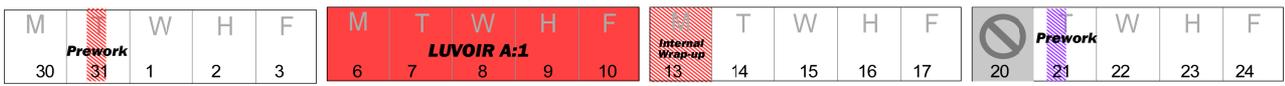
Keep Out Dates
 AAS & SPIE: Jan 3-7, 2017
 LUVOIR: August 6-10, 2017

LUVOIR Family of Studies █
 OST Family of Studies █
 Probe Class Studies █
 Vacation █
 Gov't Holiday █

January



February



March



April



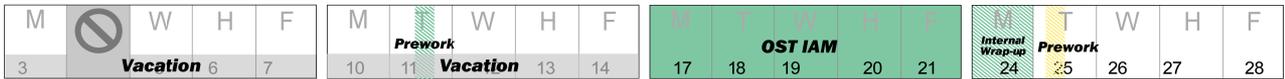
May



June



July



August



September



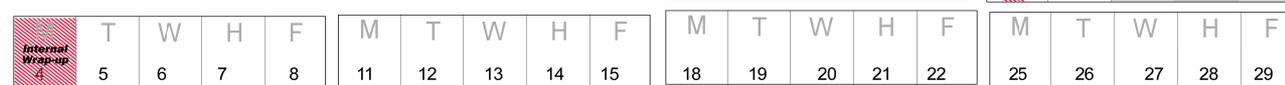
October



November

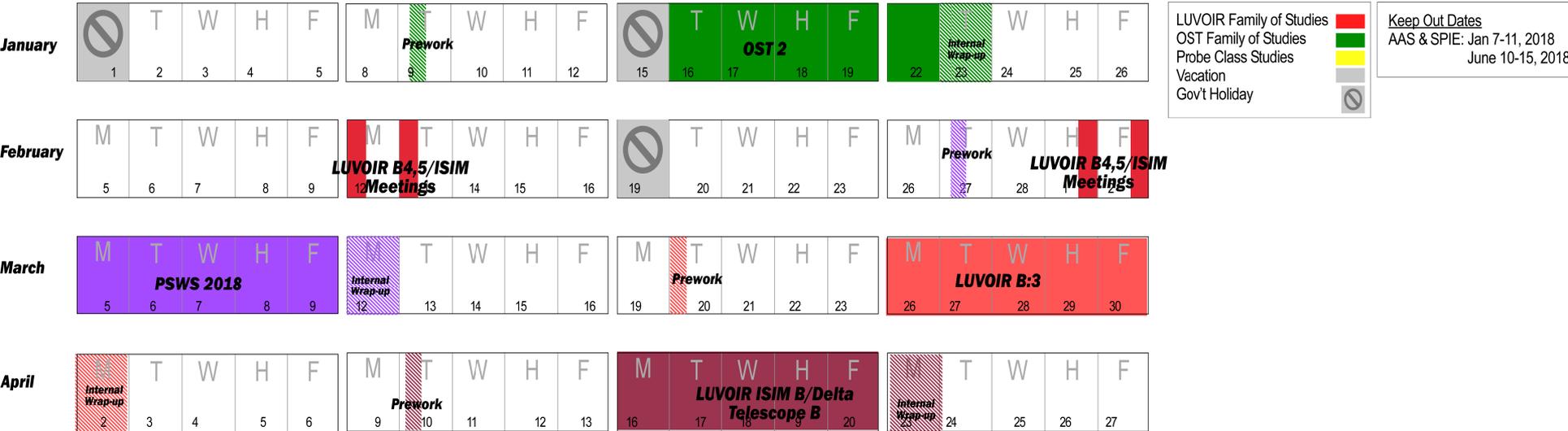


December



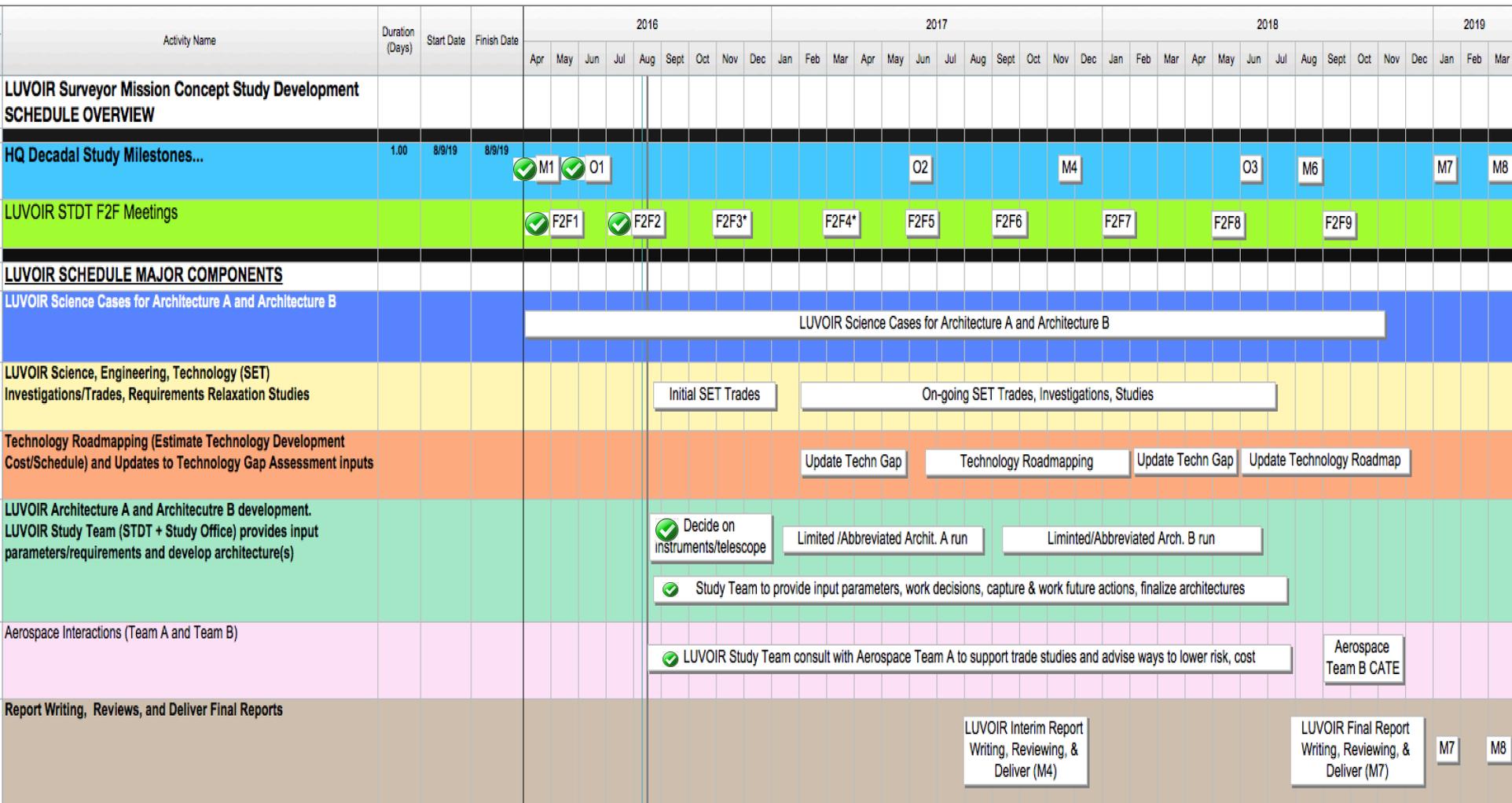


IDL Schedule Studies 2018





LUVOIR Study Schedule Overview



* = Joint F2F meetings with LUVOIR and HabEx